

WHAT IS CLAIM 1 IS:

1. A DNA sequence other than present in a chromosome encoding a *patched* gene other than the *Drosophila patched* gene or fragment thereof of at least about 12bp
5 different from the sequence of the *Drosophila patched* gene.
2. A DNA sequence according to Claim 1, wherein said *patched* gene is a mammalian gene.
- 10 3. A DNA sequence according to Claim 1 for human, mouse, mosquito, butterfly or beetle *patched* gene.
4. A DNA sequence according to Claim 3, wherein said DNA sequence is a human sequence.
- 15 5. A DNA sequence according to Claim 4, wherein said DNA sequence is a mouse sequence.
6. A DNA sequence according to Claim 1, wherein said DNA sequence is a
20 fragment of at least about 18bp.
7. A DNA sequence according to Claim 1 joined to a DNA sequence comprising a restriction enzyme recognition sequence.
- 25 8. An expression cassette comprising a transcriptional initiation region functional in an expression host, a DNA sequence according to Claim 1 under the transcriptional regulation of said transcriptional initiation region, and a transcriptional termination region functional in said expression host.
- 30 9. An expression cassette according to Claim 8, wherein said transcriptional initiation region is heterologous to said DNA sequence according to Claim 1.

10. An expression cassette according to Claim 8, wherein said transcriptional initiation region is homologous to said DNA sequence according to Claim 1 and includes the enhancer region.

5 11. A cell comprising an expression cassette according to Claim 8 as part of an extrachromosomal element or integrated into the genome of a host cell as a result of introduction of said expression cassette into said host cell and the cellular progeny of said host cell.

10 12. A cell according to Claim 11, further comprising the *patched* protein in the cellular membrane of said cell.

13. A cell according to Claim 11, wherein said *patched* protein is a mouse *patched* protein.

15 14. A cell according to Claim 11, wherein said *patched* gene is a human *patched* protein.

15 15. A cell according to Claim 11, wherein said transcriptional initiation region is a *Drosophila patched* gene transcriptional initiation region comprising the promoter and enhancer joined to a heterologous gene.

20 16. A cell comprising an expression cassette comprising a transcriptional initiation region functional in an expression host, said transcriptional initiation region
25 consisting of a 5' non-coding region regulating the transcription of *patched* protein comprising the promoter and enhancer, a marker gene, and a transcriptional termination region, as part of an extrachromosomal element or integrated into the genome of a host cell as a result of introduction of said expression cassette into said host, and the cellular progeny thereof.

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17. A cell according to Claim 16, wherein said transcriptional initiation region is the *Drosophila* region.

18. A method for following embryonic development employing the *patched* protein in an embryo, said method comprising:

integrating an expression cassette comprising a transcriptional initiation region functional in embryonic host cells, said transcriptional initiation region consisting of a 5' non-coding region regulating the transcription of *patched* protein, a marker gene, and a transcriptional termination region, wherein said embryonic host cells are capable of developing into a fetus;

growing said embryonic host cells, whereby proliferation and differentiation occur; and

locating cells comprising expression of the *patched* protein by means of expression of said marker gene.

19. A method for producing *patched* protein, said method comprising:
growing a cell according to Claim 11, whereby said *patched* protein is expressed; and

isolating said *patched* protein free of other proteins.

20. A method for screening candidate compounds for binding affinity to the *patched* protein, said method comprising:

combining said candidate protein with a vertebrate or invertebrate cell comprising said *patched* protein in the membrane of said cell and an expression cassette comprising a transcriptional initiation region functional in said cell, a DNA sequence according to Claim 1 comprising the entire coding sequence under the transcriptional regulation of said transcriptional initiation region, and a transcriptional termination region functional in said cell, expressing said *patched* protein in said cell; and

assaying for the binding of said candidate compound to said *patched* protein.

21. A method for screening candidate compounds for agonist activity with the *patched* protein, said method comprising:

- combining said candidate protein with a vertebrate or invertebrate cell comprising said *patched* protein in the membrane of said cell and an expression
5 cassette comprising a transcriptional initiation region functional in an expression host, said transcriptional initiation region consisting of a 5' non-coding region regulating the transcription of *patched* protein, a marker gene, and a transcriptional termination region, as part of an extrachromosomal element or integrated into the genome of a host cell; and
10 assaying for the expression of said marker gene.

22. A monoclonal antibody binding specifically to a *patched* protein, other than the *Drosophila patched* protein.